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Converse Consultants Southwest, Inc.

A Wholly Owned Subsidiary of
The Converse Professional Group

October 4, 1994

94-63140-01

CH2M Hill
777 18th Avenue, N.E.
Bellevue, Washington 98004-5118

Attention: Ms. Joan Stoupa, P.E.
Project Manager

Re: Asbestos Survey and Sampling Plan

Dear Joan,

The attached is our Survey and Sampling Plan. I have considered it a draft, and will address any questions or comments you have. You may contact me through Bison's office at (509) 624-4341 today.

We are planning to begin data gathering on site Wednesday at approximately 9:30 a.m. and can then be reached temporarily through the Pintlar office. I will plan to meet with Bill Hudson first when we arrive on site.

I did not mention mobilization and remobilization in the Plan because at this time it does not appear necessary and it does not fit within the project time frame or scope of work in our contract. If major parts of the site are unaccessible when we conduct our advance work this week, I will contact you immediately to open further discussion on this topic.

The attached Plan was adapted from a "standard" work plan used for AHERA and major industrial projects previously. It does not include minute detail, as I previously stated would be the case. Our survey approach will be adjusted, as necessary, to meet the project objectives.

We look forward to maintaining close communications with yourself and Sean and Armina throughout this project.

Sincerely,

CONVERSE CONSULTANTS MR, INC.

Tom Wise

Tom Wise
Project Manager

c.c. Don Hurst, Bison
Field

Converse Consultants Southwest, Inc.
4840 Mill Street, #5
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9.5.1 1009

Converse Consultants Southwest, Inc.

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DRAFT

BUNKER HILL SUPERFUND SITE
ASBESTOS SURVEY
AND
SAMPLING PLAN

Prepared for

CH2M HILL
777 18th Avenue, N.E.
Bellevue, Washington 98004-5118

Attention: Ms. Joan Stoupa, P.E.

Prepared by:

CONVERSE CONSULTANTS MR, INC/
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October 4, 1994

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BUNKER HILL SUPERFUND SITE
ASBESTOS SURVEY AND SAMPLING PLAN
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Attachment: **PROJECT TIME SCHEDULE**

BUNKER HILL
ASBESTOS SURVEY PLAN

1.0 PURPOSE OF SURVEY

The purpose of this first phase of our work is to provide an asbestos survey prior to abatement and demolition of structures of this Superfund Cleanup Site. The next phase is to provide design and bid assistance, based on the survey results. Therefore, our purpose is to provide a comprehensive asbestos assessment that will provide the basis for abatement design and bid functions.

The project contract (from proposal) provides a detailed Scope of Work which has been supplemented by an additional discussion on site safety, sampling requirements, survey contents and the purpose of the survey. Participants in the discussion included: Joan Stoupa, P.E. Project Manager CH2M Hill; Armina Nolan, NESHAP Coordinator USEPA; Sean Sheldrake, Project Manager, USEPA; Don Hurst, Field Manager, Converse/Bison; Peggy Williamson, Survey Team Leader, Converse/Bison; and Tom Wise, Project Manager, Converse/Bison.

2.0 PRESURVEY REQUIREMENTS

Besides the preparation of this Asbestos Survey Plan, the CONVERSE/BISON team has established sampling and labeling strategies, enabling the selection and procurement of label materials and sample equipment. Additional techniques may be incorporated based on site experience.

Also, a site specific Health and Safety Plan has been drafted for the survey mobilization. The Plan is a separate document. Plan requirements include personal protective equipment and decontamination facilities. Decontamination facilities are being rented from Pintlar Corporation.

An advance team comprised of the CONVERSE/BISON survey project managers and team leaders will visit the site prior to the full survey teams arrival to assess survey approaches, materials, personal protective equipment (PPE), accessibility and safety issues.

3.0 FIELD DOCUMENTATION

3.1 Survey Forms

Documentation of results will begin during the field survey and continue until the report is finalized. During the field survey, two forms will be initiated to record the necessary information:

- Site Survey Log
- Asbestos Survey Data Form (and Bulk Data Form)
- Laboratory Chain-of-Custody Form

The information on these forms provides complete documentation of field conditions, sample collection, and chain-of-custody.

3.1.1. Site Survey Log

The survey team will complete a Site survey Log Form for each day survey work is conducted. This form summarizes general information regarding the facility descriptions, the time the building was surveyed, conversations that transpired during the course of the survey, and any problems encountered during the survey. It also includes documentation of PPE use and health and safety sampling performed.

3.1.2 Asbestos Survey Data/Bulk Data Form

All facilities to be surveyed will be inspected for ACM. The survey team will take samples of friable and non-friable suspect materials. All information will be thoroughly documented on the Asbestos Survey Data Form. Suspect material locations that cannot be accessed will be documented on this form, with observations relating to presence or absence of suspect Homogeneous ACM and quantification estimates.

3.1.3 Chain-of-Custody Form

A chain-of-custody form will be initiated by the field survey teams for each daily lot of samples collected. The form will provide for specific identification of the contents and have successive signature lines for each time the package changes hands. Similar chain-of-custody forms will be used for QA/QC or overflow samples sent from the Converse Laboratory to the QA/QC laboratory.

4.0 SURVEY

4.1 Visual Inspection

A visual inspection will be performed of all structures to determine if suspect asbestos materials are present. Samples of suspect materials will be collected during this inspection as described in Section 4.2. Sample locations will be notated in the report.

Quantification will be made of materials confirmed to be ACM by methods suitable to the circumstances. This shall include measurements with tapes, measuring wheels or electronic devices. As-built drawings may be used, if they are confirmed to be reliable.

4.2 Sampling

Friable and non-friable suspect material found during the survey will be sampled to determine if asbestos materials are present. Items to be sampled include but are not limited to:

- TSI on pipelines, tanks, vessels, etc.
- Contamination on structures and in soil.
- Building materials including roofing, flooring, wall material, grout and other miscellaneous materials.

Suspect materials that are not accessible will be documented on the Asbestos Survey Data Forms and will become part of the assessment report.

4.3 Sampling Strategy

The following table lists the proposed number of samples to be collected for materials of homogenous appearance that we attempting to define as Non-Asbestos Materials. All sample locations within homogeneous materials or areas will be randomly selected. The sampling is being being defined by the number of samples it will take to define the extent of Non-ACM areas. Materials will be confirmed as ACM by one positive sample.

BULK MATERIAL SAMPLING STRATEGY
TO CONFIRM NON-ACM AREAS

MATERIAL	AREA/LENGTH	UNITS*	MINIMUM NO. OF SAMPLES
Friable Surfacing	<5,000	SF	2
	>5,000	SF	3
Pipe Insulation (Per Size)	<1,000	LF	1-3
	≥1,000	LF	3-5
Pipe Fittings (Per Size)	Room or Area	EA	1-3
Miscellaneous Friable & Non-Friable Materials	<5,000	SF	2
	>5,000	SF	3

*Units abbreviations are: LF = linear feet, SF = square feet, EA = each.

4.4 Sample Collection Procedures

Depending upon material condition and location, sample collection may be performed by a technician wearing a respirator and other protective clothing. Spots where samples are collected will be identified by bright yellow paint.

All sample locations will be marked with a Tyvec tag bearing the letters CONVERSE/BISON, the sample sequence number, the inspector and the date. This tag will be affixed to the sample points by a wire or other permanent means.

Samples will be collected by use of either a coring device, knife or other means. The sampling procedure will consist of the following steps:

Step 1. Wet surface to be sampled.
Step 2. Remove sample.
Step 3. Immediately place sample in sample container.
Step 4. Attach sample label to container.
Step 5. Note sample on Asbestos Survey Data Form/Bulk Sample Form.
Step 6. Attach sample I.D. label to sample location.
Step 7. Paint location with visible yellow paint, or in obscure locations paint an indicator arrow on access way leading to sample location.

4.5 Sample Identification System

Each sample will be identified on the sample bag by a label consisting of the consulting firm name and a unique sequential number for that individual sample.

CONVERSE/BISON
000000000000

4.6 Sample Packaging

At the time of collection all samples will be placed in labeled, airtight polyethylene bags. At the completion of sampling all bags will be placed in larger plastic bags which, in turn, will be sealed inside appropriately-sized cardboard boxes. Chain-of-custody will be initiated, and the Bulk Material Data Form will be enclosed within a plastic bag and are placed inside the cardboard box.

4.7 Chain-of-Custody Procedures

A standardized document will be utilized for tracking of all samples being collected and transported to the Converse Laboratory in Boise or FRS Geotech in Denver, Colorado. The intent of the chain-of-custody procedure is as follows:

- To ensure that samples are handled appropriately.
- To ensure that only designated personnel obtain custody of the samples.
- To ensure that samples accepted by the laboratory are not tampered with, are intact, and are in as-packaged condition.

The field survey technicians will initiate the chain-of-custody form for each lot of samples collected during the survey.

Each time the samples change hands, successive lines of the transfer information will be completed. Ultimately, the final "received by" signature will be that of the designated laboratory representative.

Upon receipt at the laboratory, the security and condition of each package will be verified. Upon acceptance of the package by the lab, each sample received will be cross-checked with those listed as collected at the bottom of the form.

The chain-of-custody will become a permanent part of the project data. Throughout the process, the number of personnel involved in transferring samples will be minimized.

5.0 BULK SAMPLE ANALYSIS

5.1 Procedures for Receiving and Logging Samples

The Laboratory Coordinator or his designated representative will be responsible for receipt and acceptance of all samples submitted to the laboratory. Upon receipt of samples the following steps will be followed:

Step 1. The receiver will inspect each package for damage and ensure that the security seal is undisturbed.

Step 2. If damage is evident or if the seal is broken, the receiver will not submit the affected samples to the laboratory until the matter has been resolved to his satisfaction.

Step 3. After acceptance of each package the receiver will sign and date the chain-of-custody information on behalf of the laboratory facility. If the samples have been received from a commercial carrier, the package receipt from that carrier will be attached to the data form.

5.2. Analytical Methods

All bulk samples will be analyzed for mineral composition, using polarized light microscopy with dispersion staining (PLM/DS). This analysis will be performed in accordance with "Interim Method For the Determination of Asbestos in Bulk Insulation Samples," EPA-600/M4-82-020, as amended.

5.3 Analytical Results

Analytical results for each sample will indicate the following:

- Name of Analyst.
- Date of Analysis.
- Project Identification.
- Sample Identification.
- Type of Asbestos, if any.
- Asbestos Content (percent), if any.

6.0 QUALITY ASSURANCE PROCEDURES

CONVERSE/BISON's Quality Assurance/Quality Control (QA/QC) Program will be integral to all aspects of the survey program. QA/QC elements start with all planning and presurvey documentation and carry through to the final survey report. CONVERSE/BISON's objectives in establishing QA/QC measures are as follows:

- To ensure consistent results among all involved participants and among all facilities surveyed.

- To ensure accurate, reliable, and verifiable results in all phases of the survey.

- To produce a technically sound presentation of complete and verifiable findings.

In general, CONVERSE/BISON places a special emphasis on producing a final product which is scientifically sound, is sensitive to the client's needs, and exhibits the highest professional standards. In striving to achieve these goals, CONVERSE/BISON incorporates in its QA/QC such elements as:

- Participation in the only available national quality control program for bulk asbestos.
- State-of-the-art training of project staff.
- Minimum education requirements of project personnel.
- Presurvey planning and staging.
- Standardized documentation formats.
- Standardized field and laboratory protocols.
- Use of state-of-the-art methodologies.
- Implementation of confidentiality and security measures.

6.1 Bulk Sample Analysis Accreditation

CONVERSE is currently accredited in the National Institute of Standards and Technologies (NIST) National Voluntary Laboratory Accreditation program (NVLAP). Converse's laboratory number is 2091.

FRS Geotech, Inc. is currently accredited in the National Institute of Standards and Technologies (NIST) National Voluntary Laboratory Accreditation program (NVLAP). FRS Geotech's number is 2078.

Currently all analyses in these two laboratories is conducted by scientists with minimum five years' asbestos analytical experience and related college degrees, primarily master degrees.

6.2 Field Quality Control

6.2.1 Staff Training

The CONVERSE/BISON Survey Team Leaders assigned to the field survey will have the following minimum qualifications:

1. Bachelor of Science Degree.

2. Minimum five years asbestos survey experience.

3. Maintain current EPA accreditation for "Inspecting Buildings for Asbestos-Containing Materials."

4. Maintain current EPA accreditation for "Management Planners" (Asbestos).

5. Maintain current EPA accreditation for "Designers" (Asbestos).

6. Maintain current EPA accreditation for "Contractor/ Supervisor."

7. Performed and directed multi-facility asbestos survey work.

6.2.2 Planning and Preparation

Each survey tasks will be preplanned and organized in order to maximize consistency and to obtain quality results. A checklist of all required documents, equipment, and supplies will be used to ensure completeness.

6.2.3 Documentation

Standardized forms will be utilized for the compilation of pertinent field data. The use of these documents is presented in previous sections. These documents will include:

- Site Survey Log.
- Asbestos Survey Data/Bulk Sample Data Form.
- Chain-of-Custody Form.

6.2.4 Sampling Protocol

Each technician will be trained in the required methods for collecting samples. These procedures follow recommended EPA protocol.

6.2.5 Side-by-Side Sampling

Each technician will collect one replicate sample per 20 samples as a quality control sample operation.

6.2.6 Field Data Verification

At the end of each day's activity, a technician will review all forms and data collected to ascertain there are no missing data, as well as accuracy of data and proper completion of all forms. This will help ensure that data are complete and accurate while the survey teams are on site.

6.2.7 Reports to Management

Also on a weekly basis, the Laboratory Manager will prepare a summary review of all analyses performed during that week. These reports will document the results of the analyses and will be submitted to the Project Manager and Field Manager for review. The Field Manager will report field survey progress weekly, and adjust survey crew size to meet intended schedules.

THE END

CH2M Hill

Bunker Hill Complex
Asbestos Assessment & Sampling Timeline